UNDERWATER BRIDGE INSPECTION REPORT

STRUCTURE NO. R0156

PEDESTRIAN WALKWAY

OVER THE

PELICAN RIVER (MILL POND)

DISTRICT 4 - OTTER TAIL COUNTY

PREPARED FOR THE

MINNESOTA DEPARTMENT OF TRANSPORTATION

BY

COLLINS ENGINEERS, INC.

JOB NO. 3512 (CEI 14A)

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

REPORT SUMMARY:

The substructure units inspected at Bridge No. R0156, Piers 1 and 2, were found to be in good condition with no defects of structural significance observed. The channel bottom around the substructure units appeared stable with no evidence of significant scour or appreciable changes since the previous inspection. A water control dam structure was located approximately 500 feet downstream of the bridge.

INSPECTION FINDINGS:

(A) The concrete of the piers was in good and sound condition below water with only minor, 1 inch maximum diameter, concrete popouts observed in random locations along all faces.

RECOMMENDATIONS:

(A) Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of five (5) years.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Daniel G. Stromberg

Date 6/30/2004 Registration No. 21491

Respectfully submitted,

COLLINS ENGINEERS, INC.

Daniel G. Stromberg
Registered Professional
Engineer, State of Minnesota

MINNESOTA DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

1. BRIDGE DATA

Bridge Number: R0156

Feature Crossed: Pelican River (Mill Pond)

Feature Carried: Pedestrian Walkway

Location: District 4 - Otter Tail County

Bridge Description: The superstructure consists of a three span, cable suspension bridge supporting a reinforced concrete deck. The superstructure is supported by two reinforced concrete abutments and two reinforced concrete piers. The piers are numbered 1 and 2 starting from the west. No foundation information was made available.

2. INSPECTION DATA

Professional Engineer/Team Leader: Shirley M. Walker, P.E.

Dive Team: Clayton G. Brookins, Michelle D. Koerbel

Date: October 29, 2002

Weather Conditions: Overcast, " 35E F

Underwater Visibility: " 10 feet

Waterway Velocity: Negligible/None

3. SUBSTRUCTURE INSPECTION DATA

Substructure Inspected: Piers 1 and 2

General Shape: The piers each consist of a rectangular reinforced concrete shaft with a V-shaped nose. Foundation information was not made available.

Maximum Water Depth at Substructure Inspected: Approximately 6.6 feet.

4. WATERLINE DATUM

Water Level Reference: The top of the pier on the south end of Pier 1.

Water Surface: The waterline was approximately 3.1 feet below reference.
Assumed Waterline Elevation = 96.9.

5. NBIS CODING INFORMATION (Minnesota specific codes are used for 92B and 113)

Item 60: Substructure: Code 7

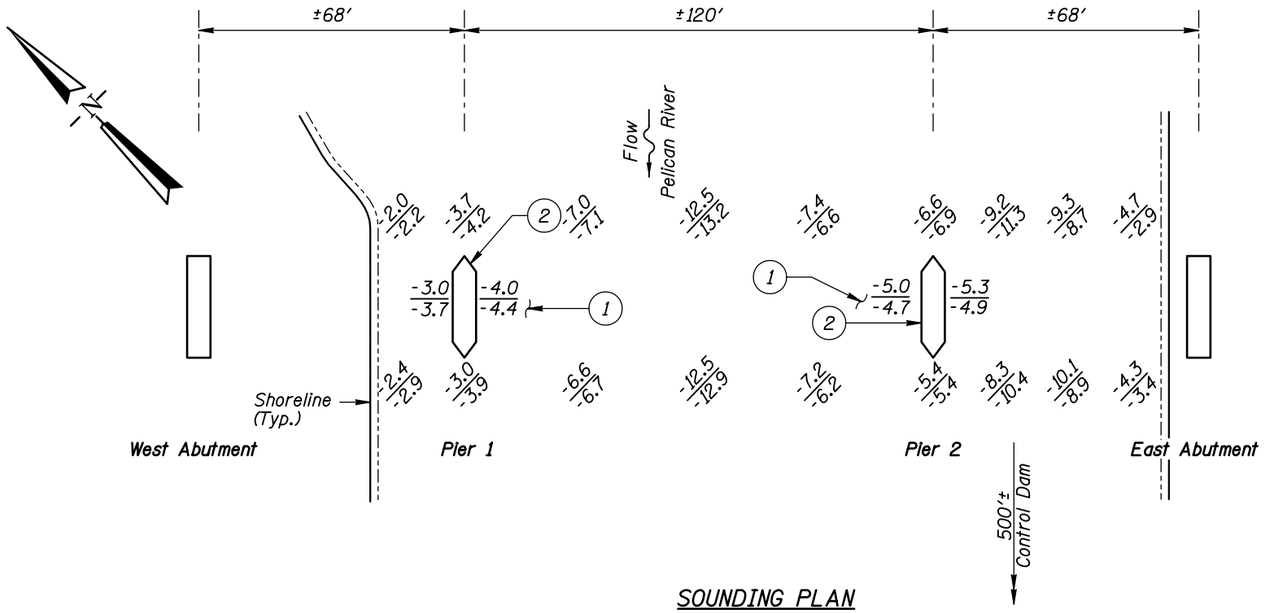
Item 61: Channel and Channel Protection: Code 8

Item 92B: Underwater Inspection: Code B/10/02

Item 113: Scour Critical Bridges: Code I/95

Bridge is scour critical because abutment or pier foundation is rated as unstable due to observed scour at bridge site.

_____ Yes __X__ No



SOUNDING PLAN

GENERAL NOTES:

1. Piers 1 and 2 were inspected underwater.
2. At the time of inspection on October 29, 2002, the waterline was located approximately 3.1 feet below the top of the pier cap at the downstream end of Pier 1. Since insufficient bridge elevation information was available a reference elevation of 100.0 was assumed. Based on the assumed reference the waterline elevation was 96.9.
3. Soundings indicate the water depth at the time of inspection and are measured in feet.
4. Soundings were taken parallel to the bridge at 1/4 point intervals between the substructure units.

INSPECTION NOTES:

(1) The channel bottom consisted of a firm sandy gravel and silt with up to 2 inches of probe rod penetration.

(2) The concrete of both piers was in good and sound condition and exhibited only random concrete popouts, up to 1 inch in diameter, on all surfaces.

Legend

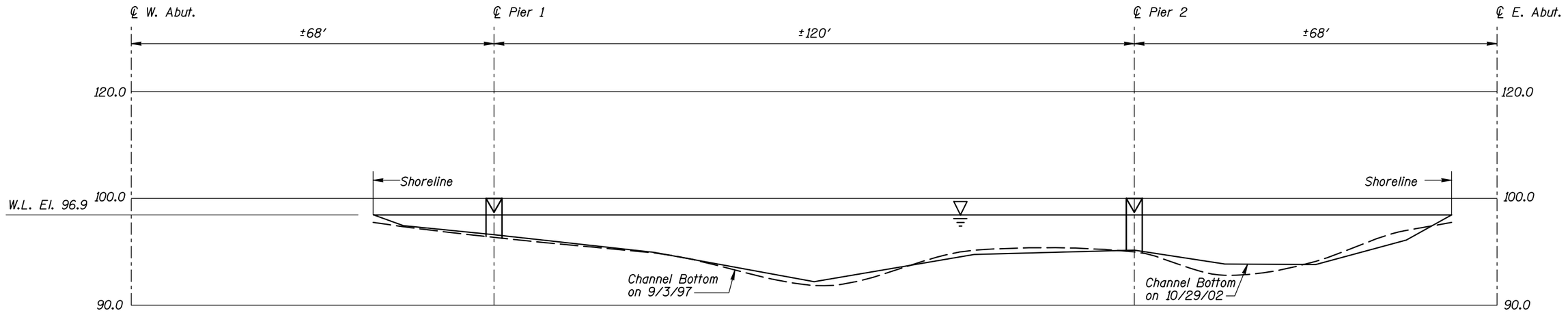
-2.0	Sounding Depth from Waterline (10/29/02)
-5.2	Sounding Depth from Waterline (9/3/97)

MINNESOTA
DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

STRUCTURE NO. R0156
OVER THE PELICAN RIVER
DISTRICT 4, OTTERTAIL COUNTY

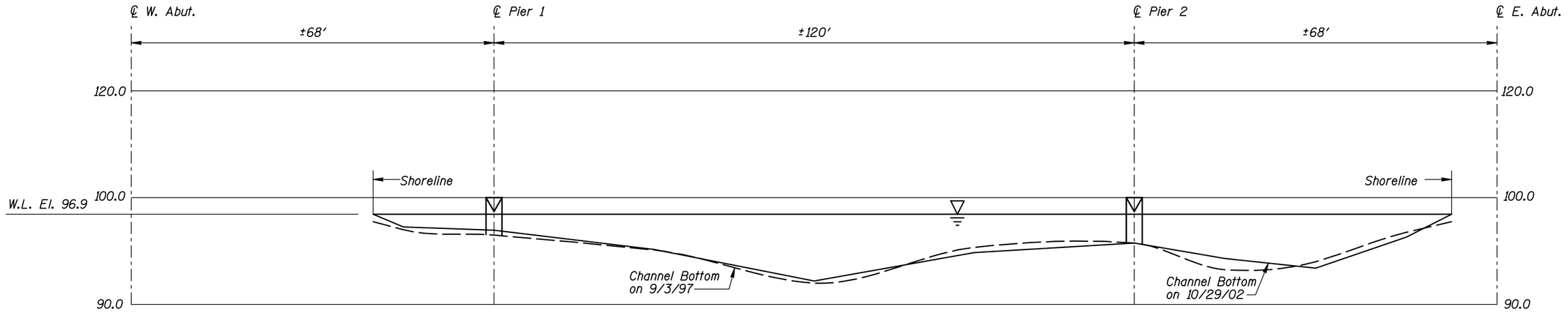
INSPECTION AND SOUNDING PLAN

Drawn By: PRH	**COLLINS ENGINEERS, INC.**	Date: OCT. 2002
Checked By: MDK	300 W. WASHINGTON, STE. 600 CHICAGO, ILLINOIS 60606 (312) 704-9300	Scale: NTS
Code: 3512014A		Figure No.: 1



UPSTREAM FASCIA PROFILE

Vertical Scale: 1"=20′-0"



DOWNSTREAM FASCIA PROFILE

Vertical Scale: 1"=20′-0"

Note:

Refer to Figure 1 for General Notes.

MINNESOTA
DEPARTMENT OF TRANSPORTATION
UNDERWATER BRIDGE INSPECTION

STRUCTURE NO. R0156
OVER THE PELICAN RIVER
DISTRICT 4, OTTERTAIL COUNTY

UPSTREAM AND DOWNSTREAM FASCIA PROFILES

Drawn By: PRH	COLLINS ENGINEERS, INC.	Date: OCT. 2002
Checked By: MDK	300 W. WASHINGTON, STE. 600 CHICAGO, ILLINOIS 60606 (312) 704-9300	Scale: NTS (U.O.N.)
Code: 35I2014A		Figure No.: 2

Photograph 1. Overall View of the Structure, Looking East.

Photograph 2. View of Pier 1, Looking South.

Photograph 3. View of Pier 2, Looking North.

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES
DAILY DIVING REPORT

INSPECTORS: Collins Engineers, Inc. DATE: October 29, 2002
ON-SITE TEAM LEADER: Shirley M. Walker, P.E.
BRIDGE NO: R0156 WEATHER: Overcast, " 35E F
WATERWAY CROSSED: Pelican River (Mill Pond)
DIVING OPERATION: X SCUBA SURFACE SUPPLIED AIR
OTHER
PERSONNEL: Clayton G. Brookins, Michelle D. Koerbel
EQUIPMENT: Scuba, U/W Light, Scraper, Lead Line, Probe Rod, Camera
TIME IN WATER: 2:30 p.m.
TIME OUT OF WATER: 2:40 p.m.
WATERWAY DATA: VELOCITY Negligible/None
VISIBILITY "10 feet
DEPTH 6.6 feet maximum at Pier 2
ELEMENTS INSPECTED: Piers 1 and 2
REMARKS: The concrete of Piers 1 and 2 was in good condition with no defects of structural significance observed. Minor concrete popouts, up to 1 inch in diameter, were observed on all faces of both piers. The channel bottom around the substructure units appeared stable with no evidence of significant scour or appreciable changes since the previous inspection. A water control dam structure was located approximately 500 feet downstream of the bridge.

FURTHER ACTION NEEDED: _____ YES ___X___ NO

Reinspect the submerged substructure units at the normal maximum recommended (NBIS) interval of five (5) years.

MINNESOTA DEPARTMENT OF TRANSPORTATION
OFFICE OF BRIDGES AND STRUCTURES

UNDERWATER INSPECTION CONDITION RATING FORM

BRIDGE NO. R0156
INSPECTORS Collins Engineers, Inc.
ON-SITE TEAM LEADER Shirley M. Walker, P.E.
WATERWAY CROSSED Pelican River (Mills Pond)

INSPECTION DATE October 29, 2002

NOTE: USE ALL APPLICABLE CONDITION DEFINITIONS AS DEFINED IN THE MINNESOTA RECORDING AND CODING GUIDE INCLUDING GENERAL, SUBSTRUCTURE, CHANNEL AND PROTECTION, AND CULVERTS AND WALL DEFINITIONS TO COMPLETE THIS FORM.

CONDITION RATING

			SUBSTRUCTURE						CHANNEL					GENERAL					
UNIT REFERENCE NO.		MAXIMUM DEPTH OF WATER	PILING	COLUMNS, SHAFTS, OR FACES*	FOOTINGS	DISPLACEMENT	OTHER (BRACING)	OVERALL SUBSTRUCTURE CONDITION CODE*	SCOUR	EMBANKMENT EROSION	EMBANKMENT PROTECTION	OTHER (DRIFT/DEBRIS)	OVERALL CHANNEL & PROTECTION CONDITION	CONCRETE	STEEL	TIMBER	LOSS OF SECTION	PREVIOUS REPAIR OR MAINTENANCE	OTHER
	UNIT DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Pier 1	4.0’	N	7	N	9	N	7	8	N	N	N	8	7	N	N	8	N	N
	Pier 2	6.6’	N	7	N	9	N	7	8	N	N	N	8	7	N	N	8	N	N

*UNDERWATER PORTION ONLY

REMARKS: The concrete of Piers 1 and 2 was in good condition with no defects of structural significance observed. Minor concrete popouts, up to 1 inch in diameter, were observed on all faces of both piers. The channel bottom around the substructure units appeared stable with no evidence of significant scour or appreciable changes since the previous inspection. A water control dam structure was located approximately 500 feet downstream of the bridge.

NOTES: ATTACH SKETCHES AS NEEDED, IDENTIFY REMARK BY REFERRING TO UNIT REFERENCE NO. AND REMARK NO.
USE GENERAL SECTION TO IDENTIFY OVERALL PRESENCE OF SPALLS, CRACKS, CORROSION, ETC.